

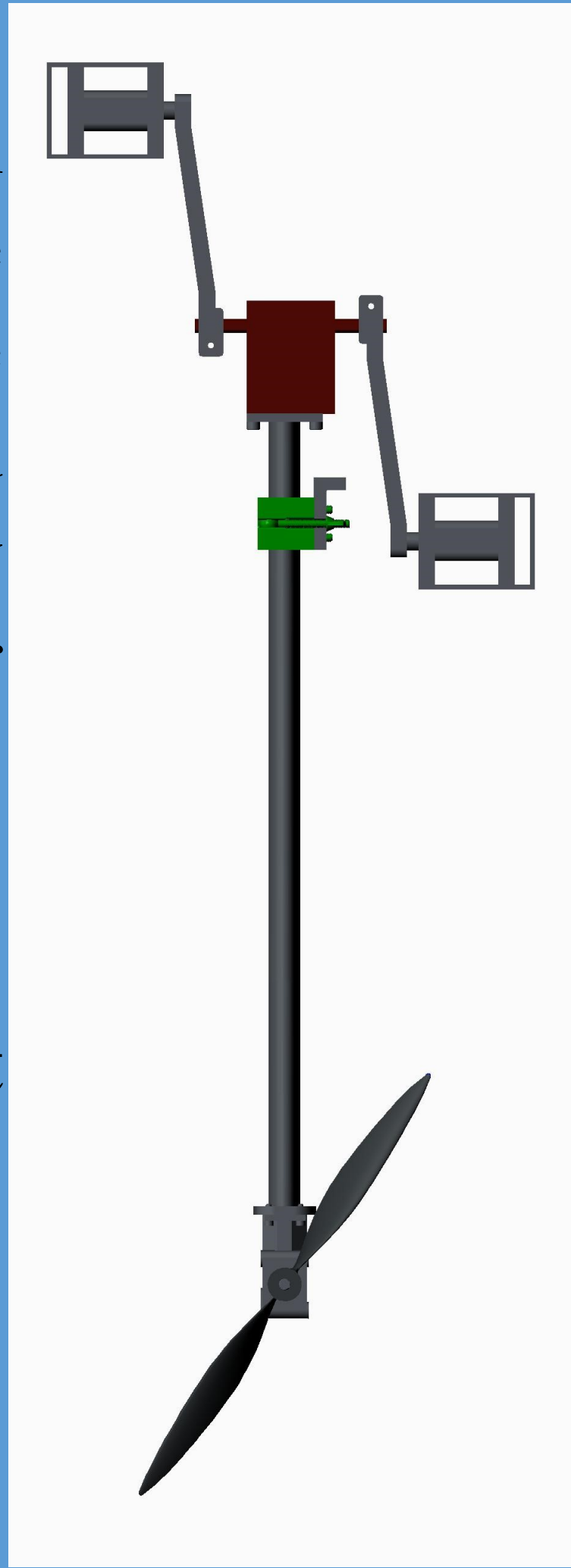
2017 Grove City College Capstone Design Human Powered Boat Team

Purpose

In 2004 a mechanical engineering senior capstone design team was tasked with designing and constructing a human powered boat. The 2017 design team assessed the 2004 design and created several improvements to function as well as the appearance of the vehicle.

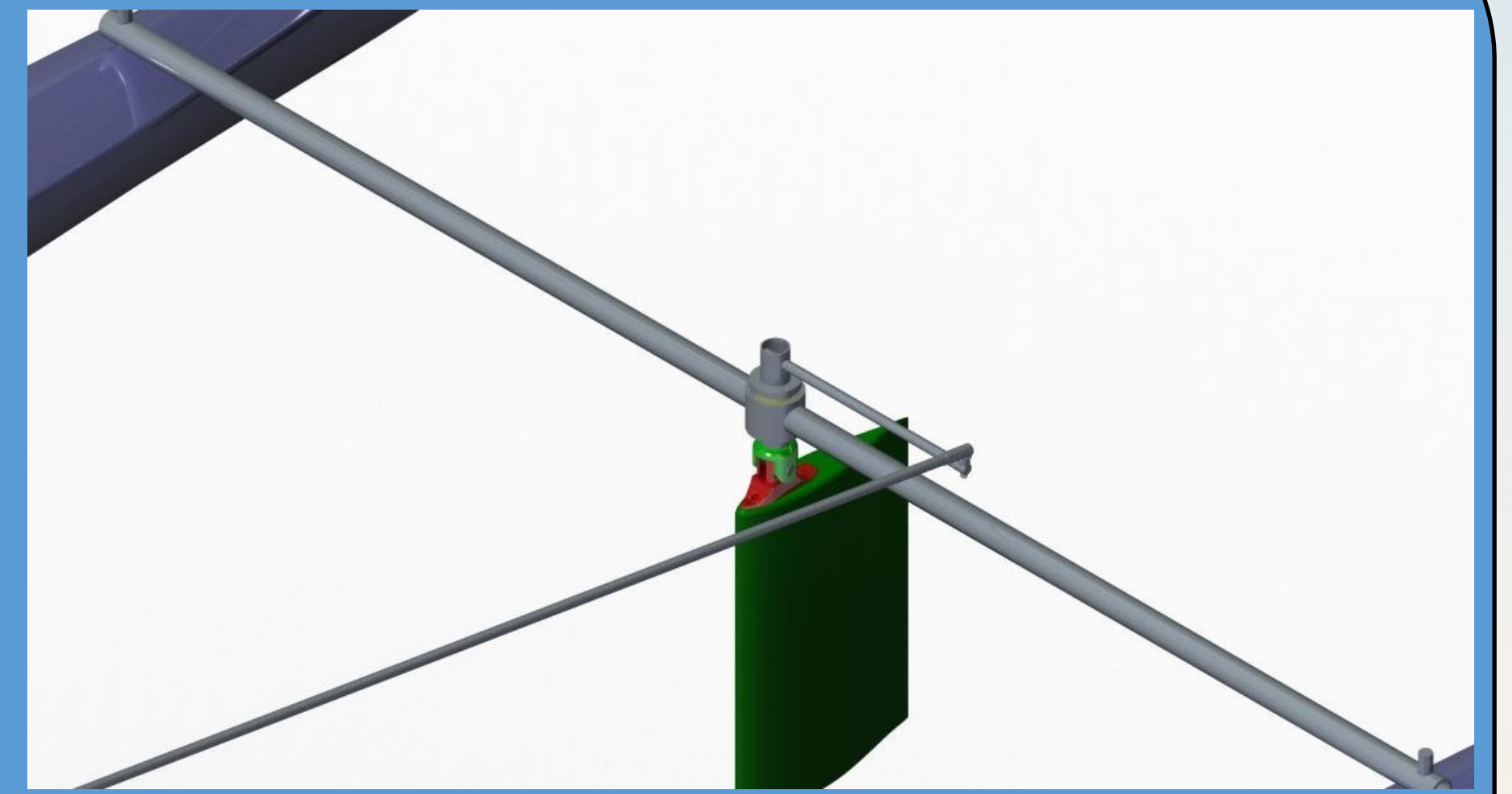
Drivetrain

The drivetrain system was originally at the front of the boat. The 2017 design moved the drive train below the rider to allow for easier access and reduce inefficiencies due to pontoon wake. A flexible attachment system was also developed by the team.



Steering

The steering of the 2017 boat was moved to the rear and implemented a linkage instead of cable to increase steering response and effectiveness.



Composites

Significant research and testing was done into improving the composite layups of the pontoons. A closed-mold process was established and documented for future use.



Attachments

Although the original 2004 frame was re-used, new frame-pontoon attachments were designed and 3D printed out of carbon reinforced filament.



Team Members: Luke Vorce, Adam Brunson, Derek Stevenson, Spencer Thurston, Samuel Mills, Austin Eckhardt, Justin Burke, Joel Bodine, Andrew Nobsch

Advisor and Team Leader: Dr. Mark Archibald

